

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1 - 4. (canceled).

5. (previously presented): A chirped pulse amplification system for a fiber optic system, the chirped pulse amplification system comprising:

a mode-locked laser;

a polarization-maintaining device coupled to an output of the mode-locked laser;

a pulse stretcher coupled to a first output of the polarization-maintaining device;

an amplifier coupled to the pulse stretcher; and

a first pulse selector coupled to a second output of the polarization-maintaining device.

6. (previously presented): The chirped pulse amplification system according to claim 5, wherein the pulse stretcher comprises:

a non-polarization-maintaining dispersion compensating fiber; and

a Faraday rotator mirror.

7. (previously presented): The chirped pulse amplification system according to claim 5, wherein the pulse stretcher comprises:

a non-polarization-maintaining dispersion shifted fiber; and  
a Faraday rotator mirror.

8. (previously presented): The chirped pulse amplification system according to claim 5, wherein the pulse stretcher comprises:

a linearly chirped fiber grating; and  
a Faraday rotator.

9. (previously presented): The chirped pulse amplification system according to claim 5, wherein the pulse stretcher comprises:

a non-linearly chirped fiber grating; and  
a Faraday rotator.

10. (previously presented): The chirped pulse amplification system according to claim 5, wherein the chirped pulse amplification system comprises:

an erbium doped fiber amplifier, an erbium and ytterbium doped fiber amplifier, or a ytterbium doped fiber amplifier;  
a wavelength division multiplexer; and  
a diode pump.

11. (previously presented): The chirped pulse amplification system according to claim 5, wherein the first pulse selector comprises an electro-optic modulator or an electro-absorption modulator.

12. (previously presented): The chirped pulse amplification system according to claim 5, wherein the polarization-maintaining device comprises a polarization-maintaining beam router, wherein a fiber polarization axis orientation of the input and output fibers matches the orientation of a polarization beam splitter within the polarization-maintaining device.

13. (previously presented): The chirped pulse amplification system according to claim 5, wherein the polarization-maintaining device comprises:

a polarization-maintaining beam router, wherein a polarization axis orientation of the input and output fibers matches the orientation of a polarization beam splitter within the polarization-maintaining device; and

a Faraday rotator, a transmissive optical device, and a mirror disposed at a first port of the polarization-maintaining beam router.

14. (previously presented): The chirped pulse amplification system according to claim 5, further comprising:

a second pulse selector coupled to an output of the first pulse selector; and

a synchronization controller that synchronizes the first pulse selector with the second

pulse selector.

15. (previously presented): The chirped pulse amplification system according to claim 14, wherein the second pulse selector comprises an electro-optic modulator or an electro-absorption modulator.

16. (previously presented): A chirped pulse amplification system for a fiber optic system operating at approximately 1550 nanometers, the amplifier comprising:

- a mode-locked laser;
- a polarization-maintaining device coupled to an output of the mode-locked laser;
- a pulse stretcher coupled to a first output of the polarization-maintaining device;
- a first amplifier coupled to the pulse stretcher;
- a pulse selector coupled to the first amplifier; and
- a second amplifier coupled through a beam splitter to a second output of the polarization-maintaining device.

17 - 34. (canceled).

35. (previously presented): The chirped pulse amplification system according to claim 5, wherein the polarization-maintaining device comprises:

a polarization-maintaining beam router, wherein a polarization axis orientation of the input and output fibers matches the orientation of a polarization beam splitter within the polarization-maintaining device; and

a Faraday rotator mirror disposed at a first port of the polarization-maintaining beam router.